



WHAT DOES THE FUTURE HOLD FOR REEFER SHIPPING AND THE COLD CHAIN?

Max Schwerdtfeger, Online Editor, Port Technology International

Refrigerated (reefer) shipping could become one of the most important drivers of supply chain and maritime growth in the coming years. There are numerous benefits, including shippers being able to reach new markets while simultaneously cutting energy costs.

Additionally, it is also an area of digital innovation and collaboration, as carriers, ports and supply chain partners look to standardise data and increase connectivity.

These factors are becoming more prevalent as businesses look for ways to get goods from origin to customer more efficiently in a time when trade is consistently growing. Consequently, major carriers are increasingly seeing reefer containers as a vital tool in their end-to-end supply chain.

For the global supply chain, which is growing thanks to the rapid increase in e-commerce, it is becoming an integral means of transportation.

The benefits of reefer containers are numerous and can be felt across the entire supply chain. Firstly, reefer containers themselves are contained refrigerated units. This allows goods to not only be refrigerated at sea but also at the port because there is no need for cold storage.

Additionally, a reefer container can be partitioned, and each section set to different temperatures, meaning some goods can be refrigerated and others frozen, depending on the journey length.

This durability allows carriers to transport perishable goods across far greater distances than they have done before and reach new markets, which in turn can export perishable goods to a bigger customer base – this is particularly true of developing economies.

However, the sector is not without its challenges, and among reefer shipping's

biggest is the problem aligning the vessels with the ports and ensuring there is enough capacity to do so. This has proven problematic throughout the COVID-19 pandemic, where some of the major hubs reported plug shortages at ports.

WHAT IS DRIVING GROWTH IN REFRIGERATED SHIPPING?

The increase in popularity not only reflects growth in developing regions but also a change in behaviour and taste in traditional markets. As plant-based diets become more popular, so do berries, avocados and other perishable fruit, which get shipped from Latin America across vast distances to China, India, Europe and North America.

“We see continued rise in demand for Reefer containers due to increasing demand for goods (fresh produce, frozen proteins,



etc) that require temperature-controlled supply chains," said Bruce Marshall, Head of Reefer Solutions, A.P. Moeller-Maersk.

This optimism is shared by Ocean Network Express (ONE), which has one of the largest reefer fleets in the world having expanded it by 5,000 units in 2020, 200 of which are equipped with Controlled Atmosphere (CA) technology.

The carrier, a collaboration between Japanese liners K Line, Yang Ming and NYK, says the reefer industry has grown in 2020 and, despite the COVID-19 pandemic, it will continue to do so.

Whereas all other raw industries are expected to suffer significant declines in 2020, transport of perishables are set to grow. As well as a demand for foods with high vitamin content this has also been driven by meat demand in China.

The COVID-19 pandemic has accelerated growth as consumers look for ways to strengthen immune systems, which means traffic of fresh fruit is going to increase steadily. A good example being South African exports of lemons, which in April 2020 were double what they were 12 months prior.

"The pandemic has also triggered a change in consumer behaviour which has led to many consumers to shop online for fresh produce and this trend has the potential to become more sustained in the long term," according to ONE.

"All such factors are contributing to the growth of the reefer business during this year," the carrier said in a statement to PTI.

Marshall said the emphasis is not only healthy products but is also on how they are transported.

"Global organic growth has been 360% since 2005. Consumers are wanting to know the origin of food stuffs that they purchase, increasing preference towards organic foodstuffs and are environmentally conscience seeking sustainable farming and transport. Although this is more prevalent in wealthier societies, it is a trend that is likely to continue as countries develop."

The predicted growth of the reefer sector is evident by major carriers' strategies. Maersk, for example, has through its subsidiary Maersk Container Industries (MCI) delivered 500 CA containers to ZIM Integrated Shipping (ZIM) to help it reach new markets.

In April 2020 it delivered a further 1,800 reefer containers to customers in South Africa to support the country's agriculture industry and meet the boom in demand.

Additionally, in April 2020 Maersk also opened a new cold store in St Petersburg, Russia, as part of its end-to-end supply chain services. The facility, the biggest of its kind in Russia, has refrigeration and freezing capabilities and was built to store perishable goods from South Africa and Latin America.

Reefer shipping and storage, also known as the cold chain, has become a vital part of carriers' long-term end-to-end strategies as they aim to give customers shorter overall lead times and more predictable costs.

The cold chain contributes to this by allowing goods to be stored in the "right and consistent temperature throughout the complete end-to-end supply chain", according to Marshall and this in turn is made easier for customers who only work with one logistics partner.

"While our immediate focus is on regions that need quality storage here and now, our long-term ambition is to have a global footprint that can meet customers' need for high-quality capacity on a global scale," Marshall said.

"The growth plan is being realised through a mix of acquisitions, greenfield investments and expansion of existing facilities."

REEFER SHIPPING LANDSIDE AND ITS EFFECTS

The effects of reefer shipping have also been felt on land as ports expand and diversify their operations to meet the needs of carriers.

The North Carolina Ports Authority announced in May 2020 that the Port of

Wilmington had broken its monthly reefer volume record by handling 1,459 TEU in April. That record meant it had quadrupled its reefer volume in five years.

Another major port aiming to become a cold chain is the Port of Barcelona, or specifically Hutchison Ports BEST. It announced in 2019 that it was increasing its connection capacity for reefer containers by 70% from 1,600 to 2,750 plugs, making it one of the most connected terminals in the Mediterranean.

An efficient end-to-end cold chain requires a seamless exchange of data between stakeholders, and this is something the Digital Container Shipping Association (DCSA) hopes to achieve. Earlier in 2020 it unveiled the internet of things (IoT) connectivity interface standards for shipping containers, dry and reefer.

The goal is to make carriers and supply chain participants provide customers with an uninterrupted flow of relevant information regarding the whereabouts of containers and the status of their contents at any point along the journey. In real terms the potential benefits include better transparency at sea and moving the containers quicker once at port.

"DCSA aims to solve the lack of interoperability between different multiple IoT container devices," said ONE.

"For reefers it will enable seamless transparency of reefer telematics data which could be useful for shippers.

"For example, it increases productivity on board monitoring process. As well known, we are operating vessels together with several partners, but with DCSA IoT standard, partners can view their container's condition data without physical monitoring process by ship's staff, even we and partner choose another device provider.

"But if we didn't have this standard, we must continue to arrange physical monitoring process by ship's crew which is not an efficient process. Such collaboration in ecosystem will also help to monitor reefer unit's performance on real time basis and take corrective actions to minimize cargo damage."

Marshall added that carriers can "can get higher productivity from reefer equipment by being able to turn the containers quicker making them more available for our customers to ship their cargo."

The benefits of reefer shipping and the importance of the cold chain has been exemplified throughout the COVID-19 pandemic, as the supply of essential goods such as food and medicines has remained unhindered. As the world changes post-pandemic to meet new consumer demands, the cold chain will continue to be a vital part of the global economy.